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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,025	07/26/2005	Hae-Wook Lee	8947-000122/US	9491
30593 7590 06/09/2008 HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			EXAMINER JACKSON, MONIQUE R	
			ART UNIT 1794	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/521,025	Applicant(s) LEE ET AL.	
	Examiner Monique R. Jackson	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/26/2005, 8/22/2005</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

1. The specification appears to be a literal translation into English from a foreign document and is replete with grammatical and idiomatic errors. A substitute specification in proper idiomatic English and in compliance with 37 CFR 1.52(a) and (b) is required. The substitute specification filed must be accompanied by a statement that it contains no new matter.
2. The use of various trademarks has been noted in this application. They should be capitalized wherever they appear and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors, for example:

- a. Given the description of the nanoparticles in the specification, it is unclear whether the Applicant's intent in Claim 2 is for the ATO, ITO and AZO to be listed as alternative nanoparticles or for the nanoparticles to include all three types.

- b. In Claims 3, 12, 17 and 31, the limitation "wherein the conductive nanoparticle is sized in diameter under 200nm and in the range of 1 80wt %, while the amphoteric solvent has 20~99 wt%" is unclear. Only one particle needs to be under 200nm? Is this an average particle diameter? 180wt%? What is the basis of the weight percentage calculations? Given that the character "~" typically means approximately, it is unclear what does the character means in the range.
- c. In Claims 6, 14, 19 and 33, it is unclear what "containing Sb with 5~20wt %" is meant to encompass. It is also unclear what basis the "acid is included". In Claims 19 and 33, "the dispersing agent is included with 1~30wt% to conductive nanoparticle" is unclear.
- d. In Claims 8 and 15, is the dispersing agent included in an amount of 130wt% or 1-30wt%? And on what basis? Amin or amine?
- e. In Claim 9, the phrases "more one resin binder", "an anti-hydrolic" and "a hydrolic" are unclear. Are both required or are they alternatives?
- f. In Claims 10, 21 and 34, "1~95wt %" is unclear including the basis for the calculations.
- g. In Claim 11, "hydrolic"? Anti-hydrolic? Although alternative expressions are permissive in the claims, they should be drafted in proper alternative format, i.e. **"selected from A, B or C"**; or in proper Markush claim format, i.e. **"selected from the group consisting of A, B and C"**. It is also noted that several of the resins are misspelled.
- h. In Claims 18 and 32, "at least more one among acids"?

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- i. Claim 20 is unclear; it recites "the compound defined in claim 19" however Claim 19 is directed to a method not a compound. Further, the term "mixing...with one more resin binders" is unclear given that there was no resin binder recited in order for there to be one more. Hydraulic? Anti-hydraulic? Are both required or alternatives?
- j. Claim 22 is unclear and drafted in improper alternative format. A product of the formers? Does this mean any product made from a glass, a ceramic, a plastic or a metal or a mixture of only the materials listed? Is processed in a plastic condition under 50~500°C is unclear.
- k. In Claims 23 and 35, what is meant to be encompassed by the term "series"? Acrylylesther is misspelled? Hardened by an ultraviolet should probably be ultraviolet radiation.
- l. In Claim 24, the ranges should be properly drafted since the character "~" is unclear. "[P]roceeds in the velocity of 15~50 m/min" is unclear.
- m. In Claim 28, "pencil intensity"? Heat ray cut off rate of 50%?
- n. In Claim 29, "the heat-ray cut off film" lacks antecedent basis. It is unclear whether the film is what prevents the heat rays from going in and out of the vessel or whether one could just not subject the vessel to heat rays.
- o. In Claim 30, "mixing...with one more resin binders" is unclear given that there was no resin binder recited in order for there to be one more. Hydraulic? Anti-hydraulic? Are both required or alternatives? Electronic ray? Heat-ray should probably be heat-ray.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-23, 25-26, and 30-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Kunimatsu et al (USPN 5,807,511.) Kunimatsu et al teach a composition for forming a near infrared screening filter and the filter formed from the composition wherein the composition comprises a binder including resins that read upon the instantly claimed resins such as alkyd resins, acrylic resins, polyester resins, urethane resins, wherein the binders may be cold-setting, bake-curing, ultraviolet-curing or freeze-defreeze curing; a metal oxide or inorganic oxide powder having a particle size of at most 0.2 μm (200nm), preferably ITO, ATO or mixture thereof; a dye; a solvent such as those listed in Col. 4, lines 42-54, including ethers such as ethylene glycol monoethyl ether as utilized in the examples; and a dispersant such as an acid dispersant (Entire document.) Kunimatsu et al teach that the blending ratio of the binder, oxide powder and dye is preferably 100:1 to 100:0.01 to 5, and more preferably 100:5 to 50:0.02 to 2, by weight (Col. 4, lines 22-27) and the amount of solvent is optionally determined taking e.g. coating operation efficient into consideration but is usually such an amount that the solid content of the composition is from 10 to 100wt% (Col. 4, lines 55-58.) Kunimatsu et al specifically teach that the ATO includes 0.1 to 20wt% of Sb, and the rest is substantially tin oxide (Col. 3, lines 32-41.) Kunimatsu et al also teach that the composition can be applied or coated directly to a substrate from which near infrared rays are desired to be cut off and curing the coating to form

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a cured coating film on the substrate, such as made of glass or plastic, for use in such applications as windows or improving the thermal efficiency of an air conditioner (Col. 1; Col. 4, line 59-Col. 5, line 15.) Kunimatsu et al further teach examples that read upon the claimed invention including (Examples 1-4.)

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 24, 27-28 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kunimatsu et al. The teachings of Kunimatsu et al are discussed above. Though Kunimatsu et al teach the use of ultraviolet radiation to cure the coating composition, Kunimatsu et al do not specifically teach the instantly claimed curing conditions however one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum curing conditions for a particular coating composition wherein the claimed conditions are well within typical conditions utilized in the art. With respect to the film thickness and properties listed in Claims 27 and 28, one skilled in the art would have been motivated to determine the optimum film thickness and optimum coating composition within the ranges taught by Kunimatsu et al for a particular end use, wherein the claimed film properties would flow naturally from the teachings of Kunimatsu et al given that the compositions are the same as claimed. Lastly, with respect to Claim 36, though Kunimatsu et al teach that the coating composition can be utilized in various applications and on various substrate materials from

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which near infrared rays are desired to be cut off or thermal efficiency is desired, Kunimatsu et al do not specifically teach a vessel containing drinking water or foods as claimed, however, such use would have been obvious to one having ordinary skill in the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R. Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 10:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Monique R Jackson/
Primary Examiner, Art Unit 1794
June 8, 2008